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Transmitted herewith for filing under 35 U.S.C. 111 and 37. C.F.R. 1.53 is the patent application of:

INVENTOR(S): WADE C. KLOSTERMAN

FOR: VOICE FEEDBACK TIMER SYSTEM

Enclosed are:

- ☒ Certificate of Mailing with Express Mail Mailing Label No. EL618531442US
- ☒ 2 sheets of drawing(s)
- ☒ Combined Declaration and Power of Attorney
- ☒ An Assignment of the invention to WC MAN PRODUCTIONS together with the recording fee of \$40.00.
- ☒ A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.
- ☒ Information Disclosure Statement

The filing fee has been calculated as shown below:

(Col. 1) (Col. 2)

FOR:	NO. FILED	NO. EXTRA
BASIC FEE		
TOTAL CLAIMS	11-20=	* 0
INDEP. CLAIMS	2-3=	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		

*If the difference in col. 1 is less than zero, enter "0" in Col. 2

SMALL ENTITY

RATE	FEE
	\$ 345.00
x 9	
x 39	
+130	
TOTAL	\$ 345.00

OTHER THAN A
SMALL ENTITY

RATE	FEE
	\$ 690.00
x 18	
x 78	
+260	
TOTAL	\$

Please charge my Deposit Account No. 19-0522 in the amount of \$ _____. A duplicate of this sheet is enclosed.

- ☒ A check in the amount of \$345.00 to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 19-0522. A duplicate of this sheet is enclosed.
- ☒ Any additional filing fees required under 37 CFR 1.16.
- ☒ Any patent application processing fees under 37 CFR 1.17.
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- ☒ Any patent application processing fees under 37 CFR 1.16.
- ☒ The issue fee set in 37 CFR 1.18 at or before the mailing of the Notice of Allowance, pursuant to 37 CFR 1.311(f).
- ☒ Any fees under 37 CFR 1.16 for presentation of extra claims.

HOVEY, WILLIAMS, TIMMONS & COLLINS

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U.S. PTO
 09/613514
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VOICE FEEDBACK TIMER SYSTEM

RELATED APPLICATIONS

This application claims the priority benefit of the provisional application entitled Voice Feedback Timer System, Serial No. 60/143,740, filed July 14, 1999, and incorporates the identified provisional application into the present application by reference.

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The present invention relates to timers and simple recording devices, and, more particularly, to portable timing devices that include alarms for indicating the end of a timed period, provide user feedback in the form of human speech, and allow for the recording of short messages.

2. DESCRIPTION OF THE PRIOR ART

People often desire to measure or limit the duration of their activities. Commonly, this involves using a timer and an alarm to measure the passing and indicate the expiration of a predefined period of time.

Relatively sophisticated apparatuses exist, such as common alarm clocks, which are able to measure periods of time with reference to the actual time of the day. Though varying in complexity, cost, and available functions, typically such apparatuses include a timekeeping function, typically comprising a clock and an associated display whereby the actual time of the day is displayed; a timer and an associated alarm; mechanisms whereby the clock and alarm may be set; and a "snooze" or delay function. Because these apparatuses inseparably combine the roles of general timekeeping and fixed period timing, users requiring only a timing function are forced to purchase, carry, program, and use the inseparable timekeeping function as well. Thus, rather than merely setting a timer, a user must convert the length of the desired timed period into an actual time of the day and then proceed to set the alarm with reference to that actual time. This may require some effort depending on the particular alarm-setting means.

For example, if, at 11:52am a user wishes to set an alarm for 12:07pm (a fifteen minute difference), he or she at the very least would have to set the hour, the minute, and the am/pm indicator. Of course, for a number of reasons, including a power outage, time change, or travel to a different time zone, the user may first find himself or herself having to set the clock upon which the alarm is based. Depending on the means provided for setting the time and the alarm, the user may have to wait as each digit or value advances from some starting value to the desired value. Once the alarm is set relative to actual time, additional steps may be required to activate the alarm such that it will sound when the set time is reached. Because of the inefficiency of associating simple fixed period timing with actual time, such apparatuses are much too inefficient, complex, and expensive for users requiring a simple timer.

Another disadvantage of conventional timers and alarm clocks, particularly for those with vision-related disabilities, is the lack of any non-visual feedback from the apparatus indicating, for example, that the alarm has been set or cleared, or which of different types of alarms will sound when the set time has been reached. Also, conventional timers and alarm clocks are typically limited to alarms consisting of either nonsense tones or radio programming with no capability for customization.

SUMMARY OF THE INVENTION

The device of the present invention is a simple, portable timer with an alarm that operates without reference to the actual time of the day. This allows the alarm to be set and the timing function initiated simply by depressing a single button representing a discrete unit of time (i.e. one hour, fifteen minutes, etc.). As in the above example, if, at 11:52am a user wishes to set an alarm for 12:07pm (a fifteen minute difference), using the voice feedback timer system of the present invention, he or she could do so with a single press of the particular button corresponding to a fifteen minute period. The timer will activate automatically with no additional steps. Furthermore, because the actual time of the day is irrelevant to the timing function, use of the present invention never requires that a clock be reset. Thus, by separating the timekeeping and timing functions and limiting the length of the timed period to discrete multiples of a

predetermined number of minutes or hours, the present invention allows for a less complex, less expensive, and lighter timing device which is much easier and faster to use than conventional alarm clocks. Users who frequently nap for discrete blocks of time, truckdrivers and students for example, will appreciate that the alarm may be set and the timing initiated with as little effort as the push of a single button. Travelers will appreciate the devices' light weight and lack of dependence on local time.

Another advantage of the present invention, particularly for those with vision-related disabilities, is its ability to provide auditory feedback indicating the operation or operative mode of the device, including that the alarm has been set or cleared and which of the different alarm types will sound at the end of the timed period.

The device further allows for the recording of short messages to be played at the end of the timed period in lieu of a default alarm tone. This provides the added advantage of allowing a user to remind his- or herself upon waking of an important event.

These and other important aspects of the present invention are more fully described in the section entitled DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT, below.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the present invention is described in detail below with reference to the attached drawing figure, wherein:

FIG. 1 is a block diagram illustrating a preferred embodiment of the present invention.

FIG. 2 is a perspective view illustrating a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to FIG. 1, a block diagram is shown which illustrates a timing device 10 which is operable to measure discrete periods of time without reference to the actual time of the day, provide audible feedback announcements in the form of

human speech regarding the device's operation or operative mode, and to sound an alarm or replay recorded messages at the end of the timed period. A preferred embodiment of the device 10 is shown as having nine major components: a timer 12; a minute button 14; an hour button 16; a controller 18; a voice chip 20; a record button 22; a microphone 24; memory element 26; a speaker 28; an ear-phone jack 30; a snooze button 32; and a housing 34.

Illustrated in FIG. 2 is a preferred positioning of the minute button 14, hour button 16, record button 22, microphone 24, speaker 28, and snooze button 32 relative to each other and to the housing 34. Preferably, the buttons 14,16,22,32 are of a relatively large size in order to facilitate use, labeled in order to facilitate identification, and located on the top portion of the housing 34 in order to facilitate access, all of which increases the ease and convenience of using the device 10.

Referring again to FIG. 1, the timer 12 is operable to measure the length of a desired period of time without reference to the actual time of day or to any specific hour or minute of the day. The timer 12 receives input via the minute, hour and snooze buttons 14,16,32 which determines the length of the timed period and sets the timer 12.

The minute button 14 is associated with discrete fifteen minute periods and may be depressed up to three times, each of which adds fifteen minutes to the length of the timed period, resulting in a maximum of forty-five minutes. Five seconds after the minute button 14 is activated the controller 18 will cause the device 10 to announce, via either the main speaker 28 or the ear-phone jack 30, that the "time is set", and the timer 12 will begin to run. If the minute button 14 is activated a fourth time before the "time is set" announcement, the timer 12 will clear, the device 10 will announce "clear", and no timing will occur.

The hour button 16 is associated with discrete one hour periods and may be depressed up to four times, each of which adds one hour to the length of the timed period, resulting in a maximum of four hours. Five seconds after the hour button 16 is activated, the controller 18 will cause the device 10 to announce that the "time is set", and the timer will begin to run. If the hour button 16 is activated a fifth time before the "time is set" announcement, the timer 12 will clear, the device 10 will announce "clear", and no timing will occur.

Furthermore, regardless of the number of times they have been depressed, if either the minute or hour buttons 14,16 are activated after the "time is set" announcement, then the device 10 will announce "clear", the timing in progress will be stopped, and the timer 12 will be cleared.

The controller 18 initiates the sounding of the alarm, which may consist of either the default chimes or a recorded message, when the timer 12 indicates that the timed period has expired. The controller 18 also governs the playing of feedback announcements regarding the operation or operative mode of the device 10.

The voice chip 20 allows the device 10 to produce human speech. This capability is essential for the replaying of recorded messages, and is also used in the preferred embodiment for providing feedback announcements in the form of human speech. The voice chip 20 is well-known and commonly available.

The record button 22, microphone 24 and memory element 26 combine to provide the device 10 with the capability of recording a message for future playback. When the record button 22 is depressed, the device 10 will instruct the user to "please record". At the end of such announcement, recording begins for a maximum of ten seconds or until the record button 22 is released. To record, a user simply speaks or otherwise directs a message into the microphone 24 while depressing the record button 22. A message can only be recorded if the timer 12 is cleared; thus, recordings should be made prior to setting the timer 12. Depressing the snooze button 32 within five minutes after recording will result in the recorded message being played. The recorded message is stored in the memory element 26, which is preferably of a commonly available type that does not erase when deprived of power.

Once the timer 12 has been set, the record button 22 allows the user to toggle between the two alarm modes, either the chimes or the recorded message. After setting the length of the timed period, as described above, depressing the record button 22 will cause the device 10 to announce either "chimes" or "your message", indicating which will be played as an alarm at the appropriate time. The user may select the desired alarm mode by depressing the record button 22 either once or twice until the desired alarm mode is announced by the device 10. After five seconds, the device 10 will announce that "time is set" and the timer 12 will begin to run. While the timer 12 is

running, depressing the record button 24 will cause the device 10 to announce the alarm mode and the total length of the timed period.

At the end of the timed period, the controller 18 will cause either the chimes to sound or the recorded message to be played. If either the minute or hour buttons 14,16 are depressed after the alarm has begun to sound, the alarm will immediately terminate. If no action is taken, however, the alarm will terminate automatically after the chimes have repeated ten times or the recorded message has played in its entirety once, thereby minimizing power consumption and extending battery life.

The snooze button 32 allows the user with the push of a single button to stop the alarm and set the timer for seven and one-half minutes. A chime will sound indicating that the additional time was set. At the end of the seven and one-half minute delay period, the alarm, whether chimes or message, will begin again. The snooze button 32 may be depressed each time the alarm or message is activated.

Normally, all announcements and alarms are made through the speaker 28. An ear-phone jack 30 is included, however, so that the device 10 may be used without disturbing others. The jack 30 is preferably a standard 3.5mm pin jack. The speaker 28 will be disabled while the ear-phones remain connected.

The present invention requires electrical power, preferably in the form of four AA batteries in order to preserve the portable nature of the device 10. It is anticipated that these batteries will supply power for up to one year. The greatest power drain occurs while the speaker 28 is in use.

From the preceding description, it can be seen that voice feedback timer system of the present invention provides for a simple, small, and inexpensive timer which has the advantages of being able to provide audible feedback in the form of human speech and to record short messages.

Although the invention has been described with reference to the preferred embodiment illustrated in the attached drawings, it is noted that equivalents may be employed and substitutions made herein without departing from the scope of the invention as recited in the claims. For example, the timer 12 and controller 18 might be combined in a single chip or circuit; similarly, the voice chip 20 and memory element 26 might be combined in a single chip or circuit. Furthermore, although described for

purposes of illustration as being a stand-alone device, the concepts disclosed herein may be incorporated into larger devices without departing from the scope of the original invention as recited in the claims.

In another embodiment, The device 10 includes a scan button which, when depressed, operates to cause the device 10 to audibly advance or scan through a number of choices or settings. The user selects a desired choice or setting by releasing the scan button immediately after the desired choice or setting is announced. For example, a user desiring to measure a forty minute time period would depress the appropriate scan button and then listen as the device 10 announces a progression of possible settings such as: "ten minutes...twenty minutes...thirty minutes...forty minutes". When the user hears "forty minutes" announced, he or she would select that setting by releasing the scan button. Five seconds later, as described above, timing would begin. The scan button could be included either in addition to or in replacement of the minute or hour buttons 14,16 of the above described invention.

In yet another embodiment, the device 10 is controlled by its user's voice. Thus, the user could activate the device 10 and make choices or settings simply by vocalizing the appropriate commands. For example, a user desiring to measure a forty minute time period and play a pre-recorded message at the end of that period would vocalize to the device 10 a command sequence similar to the following: "on...minutes...forty...alarm...message". This voice control feature could be included either in addition to or in replacement of the minute or hour buttons 14,16 of the above described embodiment.

Having thus described the preferred embodiment of the invention, what is claimed as new and desired to be protected by Letters Patent includes the following:

CLAIMS:

1. A timing device for timing discrete periods of time, the device comprising:

at least one timer operable to measure the passing of a particular period of time without reference to the actual time of the day or to any specific hour or minute of the day, the length of the particular period of time being adjustable and the adjustability being limited to multiples of a discrete number of minutes or hours;

at least one input device operable to allow for adjusting the length of the particular period of time;

a controller operable to provide feedback signals relating to the operation and operative mode of the timing device, and further operable to produce an alarm signal;

at least one speaker; and

a voice chip operable to combine with the speaker and the controller to convert the feedback signals to audible human speech.

2. The device of claim 1, further comprising an ear-phone jack operable to provide a connection point for ear-phones the connection of which causes the speaker to cease operating while the ear-phones are connected.

3. The device of claim 1, the input device being a button.

4. The device of claim 1, the discrete number of minutes being fifteen minutes.

5. The device of claim 1, the discrete number of hours being one hour.

6. A timing device for timing discrete periods of time, the device comprising:

- at least one timer operable to measure the passing of a particular period of time without reference to the actual time of the day or to any specific hour or minute of the day, the length of the particular period of time being adjustable and the adjustability being limited to multiples of a discrete number of minutes or hours;
- at least one input device operable to allow for adjusting the length of the particular period of time;
- a controller circuit operable to provide feedback signals relating to the operation and operative mode of the timing device, and further operable to produce an alarm signal;
- at least one speaker;
- at least one memory device operable to record and store a message for future playback; and
- a voice chip operable to combine with the speaker, the memory device, and the controller to convert the feedback signals and the message into audible human speech.

7. The device of claim 6, further comprising an ear-phone jack operable to provide a connection point for ear-phones the connection of which causes the speaker to cease operating while the ear-phones are connected.

8. The device of claim 6, the input device being at least one button.

9. The device of claim 6, the discrete number of minutes being fifteen minutes.

10. The device of claim 6, the discrete number of hours being one hour.

11. The device of claim 6, the device further comprising a microphone.

ABSTRACT

A portable timer with an alarm, wherein the timed period is limited to multiples of certain discrete periods of time (i.e. fifteen minutes, thirty minutes, one hour, two hours, etc.) without reference to the actual time of the day or to any specific minute or hour of the day. Thus, users need never convert to actual time the length of a period to be timed nor set the device to local time prior to use. The alarm may be set and the timing function initiated with the push of a single button. The device is further operable to provide audible feedback in the form of human speech regarding its operation and operative mode. Additionally, the device allows for the recording of a short message to be played in lieu of an alarm tone at the end of the timed period.

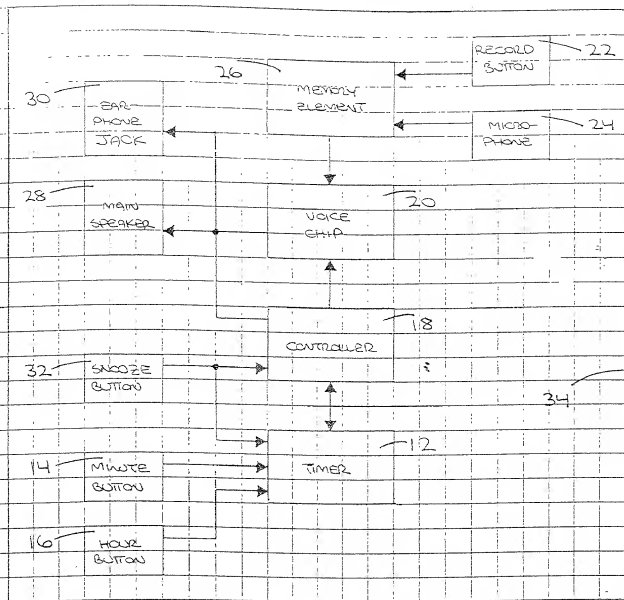


FIG. 1

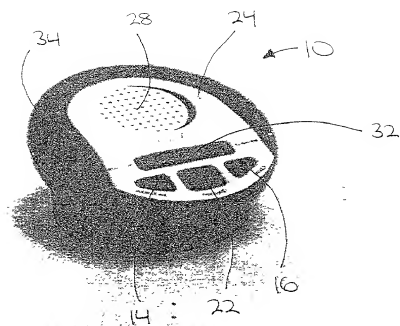


FIG. 2

As a below named inventor I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

VOICE FEEDBACK TIMER SYSTEM

the specification of which: (complete (a), (b) or (c) for type of application)

REGULAR OR DESIGN APPLICATION

(a) ☒ [X] is attached hereto.

(b) ☐ [] was filed on as Application Serial No. and was amended on (if applicable).

PCT FILED APPLICATION ENTERING NATIONAL PHASE

(c) ☐ was described and claimed in International Application No. filed and as amended on (if any).

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56(a).

☒ [X] In compliance with this duty there is attached an information disclosure statement. 37 CFR 1.97.

PRIORITY CLAIM

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed: (complete (d) or (e))

(d) ☐ [] no such applications have been filed.

(e) ☐ [] such applications have been filed as follows

EARLIEST FOREIGN APPLICATION(S), IF ANY FILED WITHIN 12 MONTHS PRIOR TO SAID APPLICATION

Country	Application No.	Date of Filing	Date of Issue	Priority Claimed
				<input type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO

ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS PRIOR TO SAID APPLICATION

PROVISIONAL

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States application(s) listed below:

60/143,740	07/14/99	Pending
Application Serial No.	Filing Date	Status (patented, pending, abandoned)

CONTINUATION-IN-PART

(Complete This Part Only If This Is A Continuation-In-Part Application)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56(a), which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application:

Application Serial No.	Filing Date	Status (patented, pending, abandoned)
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POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Robert D. Hovey	19,223	Thomas B. Luebbering	37,874
Warren N. Williams	19,156	Andrew G. Colombo	40,565
Stephen D. Timmons	26,513	Tracy L. Bornman	42,347
John M. Collins	26,262	Tracey S. Truitt	43,205
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor	WADE C. KLOSTERMAN		
Inventor's Signature	Waide C. Klosterman 7-7-2000		
Date	7-7-2000	Country of Citizenship	United States of America
Residence	3329 E. Bayaud Avenue, #116, Denver, CO 80209		
Post Office Address	3329 E. Bayaud Avenue, #116, Denver, CO 80209		
Full name of second joint inventor, if any			
Inventor's Signature			
Date	Country of Citizenship		
Residence			
Post Office Address			

Serial or Patent No.:

Filed or Issued:

For: VOICE FEEDBACK TIMER SYSTEM

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) AND 1.27(e)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

☐]

the owner of the small business concern identified below:

☒]

an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN WC MAN PRODUCTIONS

ADDRESS OF CONCERN 3329 E. Bayaud Avenue, #116, Denver, CO 80209

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled VOICE FEEDBACK TIMER SYSTEM by inventor(s) WADE C. KLOSTERMAN described in

☒] the specification filed herewith.☐] application serial no. , filed .☐] patent no. , issued .

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME _____

ADDRESS _____

☐] INDIVIDUAL ☐] SMALL BUSINESS CONCERN ☐] NONPROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

☐] INDIVIDUAL ☐] SMALL BUSINESS CONCERN ☐] NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: DR. WADE C. KLOSTERMAN

TITLE OF PERSON OTHER THAN OWNER Wade Klosterman, D.O., D.C.

ADDRESS OF PERSON SIGNING 3329 E. Bayaud Avenue, #116, Denver, CO 80209

SIGNATURE Wade C Klosterman

DATE 7-7-2000